# 1. Progression Map – year on year – COMPUTING

Subject Leader: **K.Ryan** Last updated: **November 2021**

Robert Miles Infant School

| EYFS | | KS1 pupils should be taught to (NC subject content): |
|---|---|---|
| 40-60 months *(Pre Sept 2021)* | ▪ Completes a simple program on a computer.<br>▪ Uses ICT hardware to interact with age-appropriate computer software. | ▪ Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. *Computer Science*<br>▪ Create and debug simple programs. *Computer Science*<br>▪ Use logical reasoning to predict the behaviour of simple programs. *Computer Science*<br>▪ Use technology purposefully to create, organise, store, manipulate and retrieve digital content. *Information Technology*<br>▪ Recognise common uses of information technology beyond school. *Digital Literacy*<br>▪ Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. *Digital Literacy* |
| Early Learning Goal *(Pre Sept 2021)* | Aspect/Area: Technology (Understanding the World)<br>Children recognise that a range of technology is used in places such as homes and schools.<br>They select and use technology for particular purposes. | |
| EYFS Revised Curriculum *(From Sept 2021)* | Technology strand has been removed. As a school, we will continue to use technology to support and enrich the curriculum as appropriate and in preparation for learning in Year 1. | |

| | **Computer Science** *Programming* | **Information Technology** | **Digital Literacy** *inc. E-Safety* | Supporting Resources |
|---|---|---|---|---|
| **Reception** | ➢ I know that I have to give a programmable toy instructions to make it move.<br>➢ I can program a floor robot to make it move in the direction I want it to.<br>➢ I can predict the outcome of a simple set of instructions and test the results. | ➢ I can take a photograph on a digital camera/iPad.<br>➢ I know that photographs can be stored & retrieved.<br>➢ I know that information can be retrieved from computers and, as a class, look at age appropriate websites to support research of a particular topic.<br>➢ I can use a simple, interactive game on a computer or tablet.<br>➢ I can use the keyboard to type my name.<br>➢ I can use a paint program to create a simple picture, changing colours and using the flood fill tool.<br>➢ I can talk about information (data) presented in simple pictograms / charts. | ➢ I can identify some technology in school and at home and begin to talk about its purpose.<br>➢ I can talk about what I am doing on a computer.<br>➢ I know why it is important to be kind and polite to other people and know I can speak to an adult if someone is unkind to me.<br>➢ I know what the internet is and understand that websites can be used to find out information.<br>➢ I know to tell an adult if I see something that makes me feel worried, scared or sad.<br>➢ I can talk about the games and activities I like to use on computers and other devices, e.g. tablets, phones. | iPads<br>Digital cameras<br>Beebots<br>http://code-it.co.uk/beebot<br>Purple Mash<br>Talking whiteboards<br>Various websites, e.g. *Topmarks, Phonics Play* |
| Tier 2 & 3 Vocabulary | Program, Rules, Instructions, Predict, Outcome, Floor robot, Beebot, Buttons, Arrows, Direction, Forwards, Backwards | Technology, Computer, Monitor, Screen, Keyboard, Mouse, Internet, Website, Search, Research, Information, Photograph, Camera, Save / Print, Pictogram, Chart | Internet, Online, Website, Device, Computer, Phone, Tablet, Console, Rules, Permission, Personal information, Safety, Stranger, Danger | |

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| | Computer Science *Programming* | Information Technology | Digital Literacy *inc. E-Safety* |
|---|---|---|---|
| **Year 1** | ➢ I can follow a given sequence to program a floor robot, including forwards, backwards and turns.<br>➢ I can use symbols to represent an instruction in the correct order, e.g. ↑→ for forward and turn right.<br>➢ I know that an algorithm is a set of clear and precise instructions, that must be followed in order, to solve a problem or achieve an objective.<br>➢ I know that an algorithm written for a computer is called a program.<br>➢ I can work out what is wrong with a simple algorithm when the steps are out of order.<br>➢ I can read code one line at a time and make good attempts to envisage the overall effect of the program. | ➢ I can log onto school computers, with some support.<br>➢ I can access and complete a simple, interactive game on a computer or tablet.<br>➢ I can use the keyboard to type words and phrases, locating letter keys, number keys and simple punctuation.<br>➢ I know what the space bar is and can use it to make spaces between words.<br>➢ I can use a paint program to create pictures, changing the size of the pen and using the tools to create shapes.<br>➢ I can add images / animations / sound effects to my work, and begin to change some of the design features, e.g. backgrounds, size of text.<br>➢ I can enter data into a simple pictogram / chart, and use it to find answers to simple questions.<br>➢ I can enter data into a spreadsheet and begin to explain what the data tells us.<br>➢ I can save my work in a designated space / folder and know that it can be retrieved at a later stage. | ➢ I know what is meant by 'technology' and can identify a variety of examples in and out of school.<br>➢ I can identify objects that use modern technology and those that do not, e.g. *a microwave* vs. *a chair.*<br>➢ I know it is important to be kind and polite, including when online, and know what I should do if someone is unkind to me.<br>➢ I know that not everyone is who they say they are on the internet.<br>➢ I can give some examples of basic personal information (e.g. name, age) and understand that I should not share this online.<br>➢ I can talk about some of the ways to keep safe online.<br>➢ I know to tell an adult when I see something unexpected or worrying online.<br>➢ I know and understand why we have to log-in to use a computer and why I should keep my password safe.<br>➢ I know the internet can give me information about a given topic, and can use it for this purpose as part of a class or supervised group.. |
| Tier 2 & 3 Vocabulary | Algorithm, Program, Sequence, Symbol, Precise, Debug, Error, Input /Output, Predict, Repetition | Data, Save, Retrieve / Open, Folder, Program, Tools, Search Engine, Presentation, Text / Type, Space bar, Image, Animation, Sound, Multimedia, Pictogram | Technology, Internet / Online, Communication, Cyberbullying, Personal Information, Permission, Log-in / Password, Rights, Privacy, Devices |
| Resource Links | PM Unit 1.4 – Lego Builders<br>PM Unit 1.5 – Maze Explorers<br>PM Unit 1.7 – Coding (also part Info. Tech)<br>Twinkl – Programming Toys Y1 Unit *<br>Twinkl – Programming with Scratch Jr Y1 Unit *<br>Scratch Jr - https://www.scratchjr.org/<br>http://code-it.co.uk/beebot | Unit 1.2 – Grouping and Sorting<br>Unit 1.3 – Pictograms<br>Unit 1.6 – Animated Story Books<br>Unit 1.8 – Spreadsheets<br>Word | PM Unit 1.1 – Online Safety and Exploring Purple Mash<br>PM Unit 1.9 – Technology Outside School<br>Twinkl – Year 1 Online Safety Unit * |

*** Resources available on the server (Staff > Subject Leadership > Computing > Planning and Resources).**

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|---|---|---|---|
| **Year 2** | ➢ I can explain that an algorithm is a set of instructions to complete a task.<br>➢ I understand that a sequence of instructions must be clear, precise and unambiguous.<br>➢ I can use numbers, as well as symbols, to specify movements e.g. forward 4 rather than ↑↑↑↑<br>➢ I can create a simple algorithm (program) for a specific purpose.<br>➢ I can identify specific parts of program and correct some errors, e.g. Debug Challenges on Purple Mash. | ➢ I can log onto the school computers.<br>➢ I can use the keyboard to type words and sentences, using the shift key for capital letters and the space bar between words.<br>➢ I can use a range of tools and brush styles on a paint program to create a picture.<br>➢ I can begin to edit more complex digital data, such as music compositions (e.g. 2 Sequence)<br>➢ I know that computers can be used to store and organise information.<br>➢ I can organise data in a simple database and use it find information / answer questions.<br>➢ I can use a familiar program to create a simple factsheet, using a range of media, e.g. photos, text and sound.<br>➢ I know that search engines can be used to find information about a given topic and can use one to retrieve relevant, purposeful content.<br>➢ I know how to save my work in a designated space /folder and can how to retrieve it at a later date. | ➢ I can explain what is meant by 'technology' and can identify a variety of examples in and out of school.<br>➢ I can talk about why it is important to be kind and polite, including when online and know what I should do if someone is unkind to me.<br>➢ I know that some devices can connect users with other people, e.g. phones, internet, Xbox etc., and know that things can be shared electronically.<br>➢ I know it is important to have separate log-ins / passwords to shared computers and can explain why to another person.<br>➢ I know that not everyone is who they say they are on the internet. *(Revisit from Y1)*<br>➢ I know what personal information is and can explain why I should not share this online.<br>➢ I can agree and follow sensible e-safety rules.<br>➢ I know to tell an adult when I see something unexpected or worrying online. *(Revisit from Y1)*<br>➢ I can use the internet safely to search for information linked to a given topic, under the supervision of a teacher.<br>➢ I know what a digital footprint is and give some examples. |
| Tier 2 & 3 Vocabulary | Algorithm, Program, Sequence, Symbol, Precise, Debug, Error, Input, Output, Repetition | Data, Save, Retrieve / Open, Folder, Program, Tools, Digital, Search Engine, Presentation, Text, Sound, Film, Multimedia, Modern Technology | Technology, Internet / Online, Communication, Cyberbullying, Personal Information, Permission, Unexpected, Rights, Privacy, Devices |
| Resource Links | PM Unit 2.1 - Coding<br>Twinkl – Programming Turtle Logo + Scratch Y2 Unit *<br>Google Doodle Games, e.g. Coding for Carrots and Magic Cat Academy<br>Scratch Jr - https://www.scratchjr.org/<br>http://code-it.co.uk/beebot | PM Unit 2.3 – Spreadsheets<br>PM Unit 2.4 – Questioning<br>PM Unit 2.5 – Effective Searching (part Digital Literacy)<br>PM Unit 2.6 – Creating Pictures<br>PM Unit 2.7 – Making Music / BBC Bring the Noise<br>PM Unit 2.8 – Presenting Ideas<br>Twinkl – Computer Art Y2 Unit *<br>PowerPoint / Word | PM Unit 2.2 – Online Safety<br>Twinkl – Year 2 Online Safety Unit *<br>Twinkl – Programming Turtle Logo + Scratch Jr Y2 Unit Pack |

*** Resources available on the server (Staff > Subject Leadership > Computing > Planning and Resources).** *NB: Year 3 to be added in liaison with the Computing Leader at Robert Miles Junior School.*